

REMARKS

An Office Action was mailed on November 18, 2009. Any fee due with this paper, including any necessary extension fees, may be charged on Deposit Account 50-1290.

Please note the Request for Continued Examination (RCE) being filed contemporaneously.

Summary

Claims 4, 5, 9, 10, and 12-14 were examined. Claims 9 and 12 are the only independent claims.

By the foregoing, claims 9 and 12 are amended. Claims 15-18 are newly added. No new matter has been added. The rejections are respectfully traversed.

Rejection under 35 U.S.C. §103(a)

Claims 9 and 12-14 stand rejected under 35 U.S.C. §103(a) as being unpatentable over EP 0786325 to Toncelli in view of U.S. Patent No. 2,388,824 to Brown. Claims 4 and 10 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Toncelli '325 and Brown in view of DE 2309183 to Hedstrom. Claim 5 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Toncelli '325, Brown, Hedstrom and in further view of WO 2003/089189 to Toncelli.

Both independent claims 9 and 12 recite a combination of steps of preheating and hardening a binder in an oven. Specifically, claim 9 recites

(d) using electromagnetic radiofrequency waves having a frequency of less than 300 MHz to dielectrically preheat the compacted sheet to a temperature less than the temperature where catalysis of the binder starts; and

(e) hardening the binder by heating in an oven separate from pre-heating in order to obtain the finished products.

Specifically, claim 12 recites:

(d) using electromagnetic radiofrequency waves having a frequency of less than 300 MHz in an intermediate station to dielectrically preheat the compacted sheet to a temperature less than the temperature where catalysis of the binder starts; and

(e) hardening in a final station the binder by heating in an oven separate from pre-heating in order to obtain the finished products.

The rejections are respectfully traversed. None of the cited art, specifically the combination of Toncelli '325, Brown, and Hedstrom, teach, disclose, or suggest the presently claimed invention.

1. Toncelli '325, Brown, and Hedstrom teach away from the presently claimed invention. The combination of Toncelli '325, Brown, and Hedstrom (emphasis Brown) teach a heating method that is completely different from the heating method of the presently claimed invention.

In particular, the combination of Toncelli '325, Brown, and Hedstrom (emphasis Brown) teaches a heating method that has substantially different aims and different steps. Brown tries to resolve the problem wherein an outer portion of a material, especially thermosetting plastics or resins, is positioned in a heated press *"become heated to a greater extent than the inner portions of the materials . . ."* 1a:20 et al. The result of the uneven heating is that the outer portion cures prior to the inner portion.

Brown resolves this problem by preheating the material by a high frequency electric field emanating from press plates. *"When the work material is either approaching or [is at] the curing temperature,"* the material is subjected to a pressure by using a press. 1B:22-24. In turn, the press has plates that are *"heated by a different form of energy,"* e.g., steam, so that it is heated to the same temperature to which the outer portion already has been heated to prevent heat losses from the material to be cured. *"Thus, the heated plates themselves act as a heat insulating members which prevent the heat in the work from flowing out [to] confining to the work the heat developed therein by the electric field."* 1B:30 et al.

The presently claimed invention is exactly the opposite of the combination of Toncelli '325, Brown, and Hedstrom (emphasis Brown) - to reduce significantly the preheating time so that it is consistent with time it takes to perform vibro-compaction so that a continuous production, i.e., assembly-line operation, runs smoothly while balancing the critical need to ensure heating that is uniform throughout the sheet. Specification at ¶0029.

Therein, the preheating step of the presently claimed invention differs from the combination of Toncelli '325, Brown, and Hedstrom (emphasis Brown) because the preheating step is applied to a compacted sheet, e.g., *“(d) using electromagnetic radiofrequency waves ... to dielectrically preheat the compacted sheet.”* That is, the sheet has been compacted prior to pre-heating.

As is evident, the sequence steps of Brown are the reverse of the presently claimed invention. In the presently claimed invention, the sheet has been compacted prior to pre-heating. On the other hand Brown teaches preheating the work material by a high frequency electric field and then pressed. *“When the work material is either approaching or [is at] the curing temperature,”* the work material is then subjected to a pressure by using a press. 1B:22-24. *“Thus, the heated plates themselves act as a heat insulating members which prevent the heat in the work from flowing out [to] confining to the work the heat developed therein by the electric field.”* 1B:30 et al. That is, the combination of Toncelli '325, Brown, and Hedstrom (emphasis Brown) teaches heating and then pressing. Brown's heating is tantamount to using electromagnetic radiofrequency waves between the steps (b) and (c). However, in the presently claimed invention, it is a subsequent step where the heating occurs, namely step (d). As now clearly recited the heating in the oven occurs separate from a step of pre-heating.

Thus, rather than filling the gap of Toncelli '325 and Hedstrom, Brown teaches away. One skilled in the art would not consult Brown in combination with Toncelli '325 and Hedstrom to teach the presently claimed invention.

Accordingly, the Examiner is respectfully requested to withdraw the rejections for this reason alone.

2. The combination of Toncelli '325, Brown, and Hedstrom does not teach, disclose, or suggest the method. The presently claimed invention of claims 9 and 12 require

using electromagnetic radiofrequency waves having a frequency of less than 300 MHz in an intermediate station to dielectrically preheat the compacted sheet to a temperature less than the temperature where catalysis of the binder starts.

Indeed, the combination of Toncelli '325, Brown, and Hedstrom (emphasis Brown) steps even further away from the presently claimed invention. In the presently claimed invention, the pre-

heating step of the presently claimed invention is performed outside the catalysis oven, as evidenced that the pre-heating temperature is “*less than the temperature where catalysis of the binder starts.*” That is, the temperature during the pre-heating step never reaches the catalysis temperature and, consequently, catalysis of the binder cannot start. This advantageously permits for the smooth operation of the assembly line in that the amount of time the sheets spend inside the oven is substantially reduced. ¶0027.

In contrast, the combination of Toncelli ‘325, Brown, and Hedstrom (emphasis Brown), as suggested in the rejections and as noted above, pre-heats in the same location as where the catalysis occurs. That is, Toncelli ‘325, Brown, and Hedstrom (emphasis Brown) incurs a longer step where catalysis occurs during the pre-heating by raising the temperature sufficiently to start catalysis - quite contrary to the presently claimed invention.

Accordingly, the Examiner is respectfully requested to withdraw the rejection.

All dependent claims are allowable for at least the same reasons as the independent claim from which they depend.

In view of the remarks set forth above this application is in condition for examination ready passage to allowance which is respectfully requested. However, if for any reason the examiner should consider this application not to be in condition for examination or allowance, the examiner is respectfully requested to telephone the attorney at the number listed below prior to the issue of further action.

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Respectfully submitted,

/Hassan A. Shakir/
Hassan A. Shakir
Reg. No. 53,922
(212) 940.6489

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